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environmental consultants, inc.

8160 South Highland Drive • Sandy, Utah 84093 • Phone (801) 943-4144 • Fax: (801) 942-1852

FAX TRANSMISSION COVER SHEET

CORPORATE OFFICE
8160 SOUTH HIGHLAND DRIVE
SANDY, UT 84093
PH: (801) 943-4144
FAX #: (801) 942-1852

Date: 4-18-00

Time: 9:45 PM

To: Beth Wondimu (DWQ) and Wayne Hedberg (DOGM)

Fax: 538-6016 and 359-3940

Subject: TRANSMITTAL OF REVISED RECLAMATION/CLOSURE IMPLEMENTATION PLAN - NORTH LILY MINING CO.

From: BOB BAYER

YOU SHOULD RECEIVE 7 PAGE(S), INCLUDING THIS COVER SHEET. IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL (801) 943-4144

Please note that the "Excess Fluid Management Plan" referenced in the subject document as an attachment was previously transmitted (fax) to each of you under separate cover.

Bob

0016

NORTH LILY MINING COMPANY
SILVER CITY, UTAH HEAP LEACH FACILITY
Reclamation/Closure Implementation Plan

North Lily Mining Company (North Lily) intends to complete closure and reclamation construction at its Silver City, Utah heap leach facility (facility) in 2000, presuming that approvals from the Divisions of Water Quality and Oil Gas and Mining (DWQ and DOGM) can be obtained for the proposed modifications to the existing, approved closure plan. The following are the primary reclamation/closure objectives for 2000:

- cease re-application of heap leach pad draindown fluids as soon as possible by installing an enhanced evaporation system in the pregnant solution pond;
- restore the leach pad perimeter solution collection system;
- allow the leach pad to dry sufficiently to allow completion of regrading;
- select a source of topsoil substitute material to supplement the stockpile topsoil;
- regrade the leach pad;
- place a six-inch cover of topsoil and topsoil substitute over the regraded leach pad;
- mulch, fertilize and seed the topsoiled heap leach pad;
- determine and obtain DOGM and DWQ approval for a post closure fluid management system;
- design and install the post closure fluid management system;
- decommission and reclaim the barren and overflow ponds, if not necessary for the post-closure fluid management system;
- dispose of all salvageable components that will not be required in the future (after year-end);
- dispose of any components or materials that are not salvageable by either recycling or disposal as solid wastes, in accordance with appropriate regulations.

The remaining buildings and ancillary facilities would be removed and the areas on which they are located reclaimed in 2001.

The Proposed Reclamation and Closure Schedule (Schedule Table) is provided in tabular form at the end of this document.

Enhanced Evaporation System

Elimination of excess draindown and pond fluids is proposed to take place both on the leach pad and in the pregnant solution pond. This proposed system is described in the attached "Excess Fluid Management Plan," which has been prepared as directed by DWQ. This plan consists of an enhanced evaporation system to be located near the west margin of the solution pad and a second similar system to be located in the pregnant solution pond. The latter system will be installed

after necessary repairs to the pregnant solution pond primary liner have been made and the primary liner's integrity has been established to DWQ's satisfaction. This system will allow North Lily to cease re-application of fluids to the majority of the leach pad surface, enabling most of the spent leach material on the pad to begin to dry and drain down in the very near future.

When, as anticipated, the in-pond system demonstrates sufficient evaporative capacity during the late spring and early summer months to evaporate all solution that returns from the heap as well as any water not yet evaporated from the barren and overflow ponds, the pad-margin evaporation system will cease to operate. As discussed in the attachment, the in-pond system would remain in tact and operational through no later than mid-2001 in the event that the to-be-determined post-closure solution management system alone cannot adequately dispose of the draindown fluid volume that *may* persist until the vegetative cover on the leach pad is established.

The design, construction and start-up of the two evaporation systems began on April 12 and are currently estimated to be completed by July 10 (Component 2. in the Schedule Table). The Schedule Table shows the schedule for each major component of the design, construction, and start-up of these systems (Components 2.1 to 2.9 in the Schedule Table) and the attached Excess Fluid Management Plan provides a detailed description of each component.

Heap Leach Reclamation

Heap leach reclamation activities will consist of the following:

- drying the pad surface;
- restoration of the perimeter leach pad solution collection system on the south end of the west leach pad perimeter collection trench to be completed between April 24 and May 15, 2000 (Component 1.);
- nutrient characterization of the existing stockpiled topsoil and estimation of stockpile volumes, April 24 to June 15, 2000 (Component 4.1);
- determine topsoil thickness requirements by both visual observation of salt-affected surface thickness on the leach pad and salinity analyses as appropriate, May 1 to June 15 (Component 4.2);
- identification and characterization of additional topsoil substitute material followed by finalizing the revegetation seed mix, between April 24 and July 1, 2000 (Component 4.3);
- finalize (validate) proposed seed mix, June 15 - August 1 (Component 4.4);
- final regrading of the heap to create a stable configuration, August 1 and 31, 2000 (Component 6);
- placement of six inches or an alternate thickness (if so determined) of topsoil or topsoil-substitute over the regraded heap surface, September 1 to October 1 (Component 7); and,
- apply the appropriate soil amendments and seed mix, October 15 to November 15, 2000 (Component 8.)

The advice of DOGM will be sought in validating the approved topsoil and revegetation plan or making any changes necessary to better ensure revegetation success. In addition, DOGM's input on selection of a topsoil substitute source will be sought.

Evaluation of Former Land Application Areas

The adequacy of revegetation in both former land application areas would be assessed by estimating vegetative cover and diversity compared to surrounding areas. This work would be done by a qualified botanist or range scientist and is scheduled to take place between June 1 and July 1, 2000 (Component 5.).

Post-Closure Solution Management System

The current, agency-approved plan post-closure solution management calls for a passive anoxic bioreactor to be constructed at the facility. Fluids continuing to drain from the leach pad following reclamation would be passed through this system before they would be discharged, presumably via a drainfield or infiltration gallery. Bench-scale studies conducted on behalf of North Lily in the past have demonstrated that such a system has the capability to remove a number of metals, sulfate, and nitrate from the leach pad solutions; however, total dissolved solids (TDS) concentrations were not reduced (in fact, they increased). The ability to scale up from the column test to a functional bioreactor with the capability of treating a flow of up to10 gallons per minute (gpm) for an extended period of time, as had been proposed, has not been demonstrated. The risk that a bioreactor would not successfully function in this application must, therefore, be considered to be relatively high. This risk, combined with the inability of a bioreactor to reduce TDS in the draindown effluent, indicates that this method of post-closure solution management should no longer be pursued.

Instead, North Lily proposes to direct fluids to an infiltration gallery. The metals remaining in the solution at high concentration are those that have been demonstrated to be readily attenuated by soils. The primary TDS constituents present in the draindown solution in elevated concentrations may not attenuate in the soil column; however, ground water beneath the facility is deep, and with the exception of sulfate and nitrate, these constituents were not removed by the bio-reactor. In addition, the past approved use of land application for excess fluid disposal at the site apparently resulted in only one significant downside: vegetation die-off due to the high salinity of the draindown fluid. Infiltration would prevent the recurrence of this effect. The substantial depth to ground water suggests that water quality impacts caused by an infiltration system would be nonexistent, with a relatively low fluid discharge rate. The quantity of water likely to be infiltrated, which would decline and presumably approach zero discharge in a matter of one to three years (given the rainfall rate in the area and the anticipated effectiveness of a vegetated soil cover in reducing infiltration of precipitation) is anticipated to be small.

The overall concept for the post-closure fluid management system is described above. As discussed in the Excess Fluid Management Plan, conceptual design of the system is currently scheduled to be completed by July 1, 2000 (Component 3.1). Assuming approval by DWQ and DOGM of the conceptual design, the final design is currently estimated to be completed by September 15, 2000 (Component 3.2). Construction and start-up of the system would then be carried out between November 1 and December 31, 2000 (Component 10.).

Solution Pond Closure and Reclamation

North Lily is committed to closing and reclaiming the barren and overflow solution ponds in 2000 so long as one or the other of these ponds is not determined to be needed for fluid management beyond this year. The ponds will be closed and reclaimed in accordance with the existing reclamation and closure plans. This work is currently scheduled for the period September 1 to December 31, 2000 (Component 11).

Materials Salvaging, Recycling and Disposal

All materials on site will be inventoried and classified as either salvageable, recyclable, or unusable. Salvageable materials will be sold. Salvageable and recyclable components that are or may be needed to support completion of closure activities later this year and in 2001 will not be sold or recycled until they are no longer needed at the facility. Materials that are identified as unusable will be disposed of properly in accordance with their characteristics. The inventory will take place between May 1 and June 1, 2000 (Component 9.1) and salvage, recycling, and disposal will take place between June1 and November 30, 2000 (Component 9.2).

Schedule

The proposed schedule for 2000 reclamation and closure activities is presented on the attached table.

Proposed Reclamation and Closure Schedule for 2000			
	Component	Start Date	Anticipated Completion Date
1.	Restore Pad Perimeter Solution Collection System	April 24	May 15
2.	Design, Build & Start up Enhanced Evaporation Systems	April 12	July 10
	2.1 System Design Schematic	April 12	April 28
	2.2 Solution Channel Liner Repairs	May 1	May 5
	2.3 Install new pump, flow meter and weir or flume *	April 28	May 5
	2.4 Install and Start-up Pad Margin Evap. System	May 8	May 15
	Assessment Review & Schedule Readjustment	**May 16**	
	2.5 Repair Pregnant Pond Liner	June 12 **	June 21 **
	2.6 Reestablish Pregnant Pond Leak Detection System	June 21 **	June 30 **
	2.7 Construct, Install In-pond Evap. System.	July 5 **	July 10 **
	2.8 Estimate Post-Closure Pad Draindown Rate	July 1	September 1
3.	Design Post-Closure Fluid Management System		
	3.1 Conceptual Design	April 15	July 1
	3.2 Final Design	August 1	September 15
4.	Characterize, Identify, and Quantify Stockpile Topsoil & Topsoil Substitute, Finalize Seed Mix	April 24	August 1
	4.1 Nutrient characterization of stockpiled topsoil and estimate stockpile volume	April 24	June 15
	4.2 Determine topsoil thickness requirements	May 1	June 15
	4.3 Identify source of topsoil substitute and perform nutrient characterization	April 24	June 15
	Assessment Review & Schedule Readjustment	**June 15**	
	4.4 Finalize seed mix	June 15	August 1
5.	Assess Adequacy of Natural Revegetation in Former Land Application Areas	June 1	July 1
6.	Regrade Heap Leach Pad	August 1	August 31

Proposed Reclamation and Closure Schedule for 2000 (continued)			
	Component	Start Date	Anticipated Completion Date
Assessment Review & Schedule Readjustment Date		**August 15**	
7.	Apply Topsoil	September 1	October 1
8.	Apply Seed and Soil Amendments	October 15	November 15
9.	Inventory and Dispose of Salvageable, Recyclable, and Unusable Materials 9.1 Inventory 9.2 Disposal	 May 1 June 1	 June 1 November 30
On-site Review		**December 5** (on or before)	
10.	Construct Post-Closure Fluid Management System	November 1	December 31
11.	Decommission and Reclaim Barren and Overflow Ponds (if not necessary for post-closure fluid management system)	September 1	December 31

* Pending equipment availability

** Dependent upon results of previous components and/or agency approvals